

THE ANNALS

AND

MAGAZINE OF NATURAL HISTORY.

[SEVENTH SERIES.]

No. 116. AUGUST 1907.

XVI.—*A Contribution to the Knowledge of the Hymenoptera of the Oriental Zoological Region.* By P. CAMERON.

[Concluded from p. 30.]

ICHNEUMONINÆ (continued).

Chiaglas nigripes, Cam.

Chiaglas nigripes, Cam. Ann. & Mag. Nat. Hist. (7) ix. p. 152.

Runjit Valley, Sikkim, 1000 feet; April (*C. T. Bingham*).
Described from the Khasias.

In *Chiaglas* the discocubital nervure is broken by a stump and the transverse median nervure is received shortly beyond the transverse basal. The species mimics a *Myermo*, it having the same size and colour-markings as, *e. g.*, the common *M. maculitarsis*, Cam.

Haliphera latibalteata, sp. n.

Black; the face, clypeus, base of mandibles, a line on the inner orbits, above extending to near the hind ocelli, the lower half of the outer orbits, malar space, prothorax (except for a line in the centre of the pleuræ dilated at the base), a large mark in the centre of the mesonotum (trilobate at the base, roundly incised at the apex), scutellums, a broad mark down the middle of the metanotum (half in the upper, half in the lower part, of equal width) rounded above, transverse

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below, tubercles, a large mark on the lower half of the mesopleuræ (rounded below and extending on to the sternum, rounded and narrowed above at the apex), an oval spot below the hind wings, a large mark in the middle of the metapleuræ (transverse at the base, the three other sides broadly rounded), the postpetiole, almost the apical half of the second segment, two broad marks (obliquely narrowed towards the base) on the apical half of the third, two smaller oblique triangular marks on the sides of the fourth, a narrow line on the apex of the fifth and sixth, and the seventh from shortly behind the middle, bright orange-yellow, as are also the legs (except the fore femora behind, the middle at the base all round and at the apex, slightly more broadly above, the middle yellow part being about as long as the black apical); the basal and apical third of the posterior all round, the base narrowly of the four hind tibiæ (their apices more broadly), the four anterior tarsi above, and the hind coxæ and trochanters, black. The underside of the antennal scape yellow, the sixth to fourteenth joints of the flagellum white. Wings hyaline, the nervures and stigma black. ♂.

Length 14 mm.

Runjit Valley, Sikkim, 1000 feet; April (*C. T. Bingham*).

Head closely punctured, the apex of clypens and a large round depression over each antenna smooth, shining. Thorax closely punctured, the depression in the centre of propleuræ obliquely irregularly striated; the apex of the mesopleuræ finely, closely, obliquely striated below. Median segment closely rugosely punctured, the apex of the posterior median area transversely striated; the lateral apical area more strongly, irregularly, and much less closely striated; the apex of the pleuræ irregularly, stontly, obliquely reticulated. Postpetiole smooth, the second and third segments closely punctured. Gastrocœli longer than wide, somewhat pyriform, smooth on the inner side at the base, the outer side coarsely aciculated. Tarsi closely spinose. The areolet 5-angled, large, the recurrent nervure received shortly beyond the middle.

For a synopsis of the Indian species of *Haliphera* see 'The Entomologist,' 1904, p. 307. *Inter alia*, the present species may be known by the broad continuous band on the second abdominal segment.

DIPLOPTERA.

Odynerus Hewittii, sp. n.

Black; the mandibles (except at extreme apex), clypens,

the eye-incision entirely, a line down the centre of the front (narrowed on the upper half, dilated below the middle, and the apex still more widely triangularly dilated), the outer orbits almost entirely, a triangular mark between the ocelli and the eyes, a large pyriform mark on the sides of the pronotum, the two united by a narrow line, two longish lines down the centre of the mesonotum, a mark on the basal half of the scutellum (roundly incised in the middle), a large mark on postscutellum (its base transverse, the apex obliquely narrowed), a large curved triangular mark covering the sides of the metanotum, the narrowed part below, two large marks on the mesopleuræ at the base (the upper broader and shorter than the lower, the two divided by the suture), tegulæ (except for a fuscous spot), the first abdominal segment at the top of apical slope, its apex and the apices of the following seven segments, the lines dilated laterally and that on the seventh also in the middle, a mark in the centre of the eighth (narrowed towards the apex), the sides of the second ventral broadly, its apex more narrowly (the black central mark formed thereby is obliquely narrowed at the apex), and the apices of the other segments, yellow. Legs yellow, the coxæ, trochanters, and femora black behind. Wings hyaline, the anterior suffused with fuscous; the stigma fuscous, the nervures black. ♂.

Length 10 mm.

Kuching, Borneo; June (*John Hewitt*).

Clypeus as broad as long, the apical half roundly narrowed, the apex transverse. Upper part of head and the thorax, except the apex of the mesopleuræ and the base of metapleuræ (which are bare, smooth, and shining), closely, rather strongly punctured. Underside of antennal scape yellow, of the flagellum brown, as is also the hook, which is as long as the joint. Base of thorax not quite transverse, the sides of metanotum margined; the postscutellum is obliquely narrowed. The pubescence all over is short, dense, and pale.

In the Journ. Linn. Soc. 1857, p. 112, Mr. F. Smith described an *Odynerus multipictus* from Borneo; in the same journal, 1859, p. 165, he described another *O. multipictus* from Aru. In his 'Catalogue of Malay Hymenoptera' the Aru *multipictus* is duly noted, but not the earlier one. Saussure (Stett. ent. Zeit. xxiii. p. 200) redescribes what he regarded as the Borneo *multipictus*, and renamed it *guttulatus*—"parce que l'auteur l'a aussi donné à une autre espèce qui pourra le conserver." It is, however, the Aru *multipictus* of 1859 that ought to have been renamed. Bingham ('Fauna of Brit. India,' Hymen. i. p. 368) describes and figures the

Borneo *multipectus*, but only the female. Col. Bingham has given me from Sikkim the male of what is no doubt the Indian *multipectus* (*l. c.* pl. ii. fig. 13). I have unfortunately only males of these yellow-banded species. Those known to me may be separated as follows:—

- a. The pubescence dense and black, the apex of the clypeus not transverse; pygidium black; the lateral marks on metanotum not much widened above.
- Pronotum and tegulæ black; pleuræ and scutellum immaculate, second ventral segment black, with two large yellow spots, the other segments black *multipectus*, Sm.
- Pronotum, pleuræ, and scutellum marked with yellow; the ventral segments (except the apical two) for the greater part yellow. . . . *septemfasciatus*, Sm.
- b. The pubescence short and pale; the apex of clypeus transverse; pygidium with a large yellow mark; the marks on metanotum much widened above *Hewittii*, sp. n.

Odynerus heterospilus, sp. n.

Black; the clypeus, the eye-incisions, a longish triangular mark over the antennæ, the greater part of the mandibles, an oblique mark opposite the ocelli touching the eyes, the outer orbits broadly, the base of pronotum, apex of tegulæ, the base of scutellum to near the middle, a broad curved line (widened above) on the sides of metanotum, a large conical mark (longer than wide) below the tegulæ, a smaller narrower spot near the apex of mesopleuræ below, the first abdominal segment (except narrowly at the base), the apices of the second to fifth, the whole of the sixth, the base of the second ventral, and the apices of the middle ventral narrowly, yellow, the yellow on the abdomen tinged with rufous; a transverse line on the vertex behind the ocelli, the apex of pronotum from shortly behind the middle, the sides of mesonotum largely, and a spot below the hind wings surrounding a yellow mark, blood-red. Underside of antennal scape yellow, of flagellum brown. Legs yellow, the four anterior coxæ, trochanters and femora behind, and the greater part of the posterior, black. Wings clear hyaline, the radial cellule smoky, the stigma testaceous, the nervures black; the first and second transverse cubital nervures united in front. ♀.

Total length 9 mm.

Kuching, Borneo; February (*Hewitt*).

Belongs to *Odynerus* (*sensu str.*). Densely covered with short white pubescence. First abdominal segment large,

cup-shaped, not quite sessile, slightly longer than it is wide at the apex; the second longer than wide, the apex with a narrow but distinct depression. Clypeus with the apex transverse, as it is also above. Apex of postscutellum transverse; the sides of metanotum bluntly rounded, the apex transverse, not much depressed in the middle. The base of the thorax is not quite transverse and with the sides rounded.

A distinct species.

Ancistrocerus megaspilus, sp. n.

Black; clypeus, mandibles (except the inner edge), the eye-incision, the yellow extending beyond it, a longitudinal line (extending from shortly above the top of the eye-incision to the antennæ, its top narrowed, the bottom dilated), a short oblique line on the vertex running into the top of the eyes, the outer orbits broadly, a broad line on the sides of pronotum (extending from the base to shortly beyond the middle), tegulæ, basal two thirds of scutellum, the apex of the mark transverse, the sides of the metanotum broadly, the mark curved and narrowed below, a large almost semicircular mark below the tegulæ, a much smaller oblique conical mark on the apex of mesopleuræ below, a small transverse mark on the sides of the first abdominal segment at the top of basal slope, a line on the apex of the first to fifth segments (that on the first dilated in the middle, the dilated part with an incision), and a large conical mark on the sides of the second segment, yellow. Legs yellow, black behind at the base. Wings hyaline, the radial and the apex of the costal cellule fuscous violaceous, the stigma dark fuscous; the recurrent nervure interstitial, the second cubital cellule much narrowed in front, but with the nervures apart. ♀.

Total length 10 mm.

Kuching; March (*Hewitt*).

Apex of clypeus transverse, moderately wide. Thorax more than twice longer than wide, the sides at the base broadly rounded, the apex transverse. Apex of postscutellum obliquely narrowed towards the centre. First abdominal segment cup-shaped, not quite sessile at the base; at the centre of its apex is a distinct fovea, there being similar foveæ on the second and third; the segments are smooth, silky. The base of the first abdominal segment is hardly separated from the rest, but is more glabrous and shining.

Sphegida.

Cerceris baluchistanensis, sp. n.

Yellow; a small longish spot over each antenna, the vertex

from the hinder ocelli (except for a triangular spot behind each of the latter), the basal two thirds of the pronotum and the central apical furrow, three broad lines on mesonotum and a similar one across the base, the space bordering the sides of scutellums, a large triangular mark covering the basal area of metanotum, a broad line covering the central apical furrow, and the space between the meso- and metapleuræ, black; the flagellum of antennæ and the space separating the abdominal segments rufo-fulvous. Legs yellow, the femora tinged with fulvous. Wings hyaline, the apex narrowly smoky, the costa and stigma fulvous, the apical nervures black. ♂.

Length 12 mm.

Quetta; June (*Nurse*).

Metanotal area closely but not very strongly transversely striated. Head, thorax, and, to a less extent, the abdomen covered with white pubescence, closely strongly punctured, the metathorax more closely than the rest. Clypeus fringed with pale golden hair, its apex bluntly rounded. Eyes slightly converging above. Hinder ocelli separated from each other by a little greater distance than they are from the eyes. Apical half of penultimate joint of antennæ abruptly narrowed, the last bluntly rounded at the apex. First abdominal segment slightly narrowed at the base, longer than it is wide at the apex. Pygidium strongly punctured throughout, of equal width, the apex bluntly rounded, keeled; the apex of epipygium bluntly rounded.

Comes near to *C. Wallii*, Spin., from Egypt.

Cerceris quettaensis, sp. n.

Black; the face, a broad line on the lower half of the inner eye-orbits, clypeus, mandibles (except the teeth), antennal scape, two marks (broader than long) obliquely widened towards the apex on the outer edge of pronotum, tegulæ, tubercles, postscutellum, basal half of second abdominal segment, the third entirely, the fourth narrowly in the centre, widely at the sides, the fifth (except for a curved black band on the base), the sixth entirely, and the greater part of the ventral segments, bright lemon-yellow, as are also the legs. Basal four joints of antennal flagellum dark yellow, the apical brownish below. Wings hyaline, the apex narrowly smoky, the stigma dark fuscous, the nervures black. ♂.

Length 11 mm.

Quetta (*Nurse*).

Metanotal area smooth, shining, the central furrow wide,

opaque, finely rugose. Entire body closely strongly punctured. Third antennal joint as long as the scape, shorter than the second and fourth united. First abdominal segment longish oval, about one half longer than wide, as long as the second. Abdominal segments strongly but not very closely punctured, the second smooth in the centre at the apex, the others smooth at the base, the last strongly punctured, depressed at the apex. Pygidium closely strongly punctured, slightly gradually narrowed towards the apex.

Comes near, apparently, to *C. eugenia*, Schlett.

Cerceris basimacula, sp. n.

Black; a mark on the centre of the clypeus (obliquely narrowed above and below), a broad line on its apex, a broad line on the inner orbits from the antennæ, two large oblique marks on the apex of the metanotum (extending on to the pleuræ), the basal third of the abdominal petiole on the sides, more than the basal third of the second segment, and narrow lines on the apices of the fourth and fifth segments, yellow; the sides of the central and lower parts of the clypeus, prothorax, scutellums, more than the apical third of the second and third abdominal segments, a line behind the yellow on the fourth and fifth, and the apical two segments entirely, dark rufous; the apex of the first segment of a paler rufous colour. Four front legs pale rufo-testaceous; the tibiæ and base of tarsi yellow; the hind legs similarly but much darker coloured. Wings hyaline, the radial cellule smoky, the apical cubital cellule of a deeper smoky colour; the costa and stigma dark testaceous, the nervures black. Antennæ rufo-testaceous, the scape yellow below, the eight apical joints blackish, paler below. ♂.

Length 10 mm.

Sikkim.

Face strongly but not closely punctured; the clypeus more finely and closely punctured; there is a short keel in the centre of the latter, with a fovea on either side. Front and vertex strongly, somewhat closely punctured. Middle of pronotum closely punctured, the sides almost smooth; mesonotum somewhat strongly but not closely punctured; the scutellum is more strongly but not so closely punctured as the latter. Postscutellum smooth. Metanotum strongly punctured, the punctures clearly separated; the area shining, smooth. Head and thorax densely covered with white pubescence. First abdominal segment of equal width, about four times as long as wide, longer than the second; the

segments strongly punctured; the pygidium strongly but not very closely punctured; the sides rounded, narrowed at the base and apex, the latter slightly rounded inwardly. The whole abdomen covered with longish white pubescence. Hypopygium depressed at the apex; the latter has a slight rounded incision.

Allied to *C. lepcha*, Cam.

Crabro violaceipennis, sp. n.

Black; the antennal scape, a narrow transverse line on the postscutellum, a spot (broad and rounded at the base, roundly narrowed towards the apex) on the base of the metanotum in the centre, a band (rounded at the apex, the base with two incisions in the middle, the space between projecting beyond them) on the apex of the first abdominal segment, a broad irregular band on the basal half of the second, a slightly narrower band (almost continuous) on the base of the third, and similar bands (but more clearly interrupted) on the base of the fourth and fifth, bright lemon-yellow. The legs black; the fore tibiae in front and above, the middle and posterior (except below and narrowly at the apex), the middle femora broadly below, and the basal joint of the tarsi (except at the apex), lemon-yellow. Wings fuscous violaceous, the nervures and stigma black. ♀.

Length 13 mm.

Sikkim.

Mesonotum and scutellum closely punctured, the latter more closely at the base than at the apex, where the punctures run into striae. Postscutellum smooth at the base, the apex strongly but not closely punctured. Metanotal area closely longitudinally striated, the rest of the metanotum more strongly obliquely striated, the striae curved and interlacing more or less. Face, clypeus, and checks densely covered with silvery pubescence; the thorax densely covered with white to silvery pubescence, which is longest on the metanotum. Pygidium shining, longish, the basal third with deep clearly separated punctures; the rest is less strongly and more sparsely punctured, especially in the middle. There is a deep crenulated furrow down the base of the mesopleurae. Abdomen sessile, triangular.

Belongs to Bingham's section *B. c. b'*; with none of the species therein can it be confounded.

Crabro ctenopus, sp. n.

Black; a line above on basal half of mandibles, two broad

lines on pronotum, a large, irregular, oblique mark on the sides of second abdominal segment, a line (about three times longer than wide) on the sides of the third, a slightly longer and narrower one on the sides of the fourth, with two small lines between, a line on the basal half of the fifth, with two black lines in the centre at the base, a band on the centre of the sixth (with two rounded black lines, united at the base, in the centre), bright lemon-yellow. Anterior legs testaceous, the femora with the lower half yellow in front; the tarsi blackish towards the apex; the middle trochanters and femora clear lemon-yellow, with a broad black line in the middle and a short line on the apex below; the tibiae lemon-yellow, blackish at the base and apex, and with a broader blackish band in the centre; hind legs black, the metatarsus to near the middle pale yellow. Wings hyaline, iridescent, the costa and stigma black. ♂.

Length 9 mm.

Sikkim.

Abdominal petiole fully one fourth longer than it is wide at the apex; it becomes gradually widened from the base to the apex and is closely punctured. Base of metanotum with a small central area of equal width and a large area on either side (wider than long), the apical keel less distinct than the lateral and rounded; the top of the apical slope is irregularly widely reticulated, the middle smooth, the apex transversely striated. Top and apex of mesopleuræ above and at the apex smooth, the latter bounded by a rounded curved keel; the apex below with a narrow band of stout striæ. Metapleuræ (except at the apex above) striated closely. The pubescence on the head, thorax, and sides of abdomen white, on the back of the abdomen bright golden fulvous. Basal joint of middle tarsi dilated, straight on inner side, rounded on outer to near the apex, which is narrowed, below it is fringed with a comb of stout bristles, the apex projects and ends in two long spines; the basal joint of the anterior broad, curved, slightly narrowed at the base, the following three joints are broad, the second as long as the following two united; the first joint of the posterior longer than the following united, broad, narrowed at the base. The middle of the mandibles rufous.

In having the metanotum areolated this species agrees with *C. agycus*, Cam., from the Himalayas ('The Entomologist,' 1904, p. 261).

Psen montanus, sp. n.

Black, shining, sparsely covered with short white pubes-

ence. Wings clear hyaline, the nervures and stigma black; the second cubital cellule much narrowed in front, one fourth of the length of the third in front; the first recurrent nervure received very shortly beyond the transverse cubital, the second at the apex of the basal fourth; metanotum without keels, except two indistinct longitudinal ones leading down to the furrow, which is distinct, smooth on upper, crenulated on lower half; the narrowed part of petiole half the length of thorax. Body smooth; the pubescence densest and longest on the sides. ♀.

Length 7 mm.

Simla (*Nurse*).

May be known from the other black Indian species by the absence of keels and areæ on the metanotum, it being also smaller than them. *P. kashmirensis*, *Nurse*, has a "remarkable tubercle" between the antennæ, and it agrees otherwise with the present species closely, but it differs in having a triangular depression at the base of the metanotum, which also bears outwardly diverging striæ, this not being the case with the present species.

Psen rufoannulatus, sp. n.

Black, shining, densely covered with longish white pubescence; the second and third abdominal segments bright red; the apical four joints of the tarsi rufo-testaceous; the wings clear hyaline, the stigma and nervures black; abdominal petiole as long as the thorax; the front with a distinct keel down the middle. ♀.

Length 9 mm.

Simla; August (*Nurse*).

A stout species.

Metanotal area bare, shining, large, clearly defined, the apex gradually roundly narrowed to a point shortly above the middle of the metanotum; in its centre are two parallel keels; at a distance from these is a keel; separated from it at the outer edge are three or four less distinct ones. The rest of the metanotum is opaque, irregularly striated, the striæ more or less curved; the pubescence is long and dense. The first recurrent nervure is received near the apex of the basal third of the cellule, the second very shortly beyond the second transverse cubital. Hind tibiæ with about a dozen white spines. The second abscissa of radius not quite half the length of third; the second cubital cellule wide in front.

Psen puncticeps, sp. n.

Black; the knees, tibiæ, and tarsi whitish testaceous, the hinder darker tinted, with the tibiæ fuscous from shortly beyond the middle; the second and following segments of the abdomen picuous, the narrowed part of petiole half the length of the thorax. Wings clear hyaline, the stigma dark fuscous, the nervures black. Metanotum without a basal area, the sides keeled, the keels with a narrow striated band on the inner side; the furrow on the apical slope is wider and deeper on the basal than on the apical part. Antennæ stout, brownish below, the third joint about one fourth longer than the next, which is as long as the second. First recurrent nervure received close to the base of the cellule, the second at double the distance. Front closely, distinctly, the vertex less strongly punctured; there is a narrow keel down the centre of front, ending in a large stout projection between the antennæ. Parapsidal furrows distinct on basal half of mesonotum; the furrow on the base of metanotum is deep, crenulated, it is separated in the middle by a smooth space bounded by curved keels. ♀.

Length 7 mm.

Simla.

Palarus fortistriolatus, sp. n.

Black, shining, sparsely covered with white pubescence; the three lobes of clypeus, lower half of front, basal third of mandibles, a broad line on the lower three fourths of the outer eye-orbits, the apex and the sides of pronotum to near the middle, a line on its base, a large mark in front of the tegulæ roundly, irregularly narrowed at the base, tegulæ, tubercles, a line on the base of mesopleuræ, gradually narrowed below to a sharp point, not reaching to the breast, an irregular triangular spot on the outer lower side of its apex, scutellums, their lateral keels, and the greater part of the abdomen, bright lemon-yellow. Legs yellow, suffused with rufo-fulvous, the four hinder coxæ and the greater part of trochanters black; the anterior metatarsus with seven long spines of equal length (except the basal, which is shorter), the apical two close together. Wings hyaline, the apex very slightly suffused with fuscous, the stigma and nervures fulvous, the apical nervures darker coloured. ♀.

Length 13 mm.

Quetta; June.

The basal slope of the first abdominal segment, the base

of the second to sixth narrowly, and the ventral (except for a line on the apex of the second and irregular marks on the sides of the others) black; the depressed apices of the first to fourth brownish; the line on the second broad, slightly dilated in the middle, that on the third forming a broad triangle, that on the fourth narrowly dilated backwards to the apex of basal third in the middle; there is a deep furrow in the centre of the apical two thirds of the fifth. The second ventral segment becomes gradually raised in the centre towards the apex (forming about one third of the segment), the apex of the raised part slightly roundly narrowed; the part beyond this is raised also, is stontly striated, and has the apex bluntly rounded and curled up. Pygidium long, gradually roundly narrowed from the base to the apex, sparsely weakly punctured. Eyes at the top separated by not quite the length of the third antennal joint. Hinder ocelli irregularly oval, depressed in the centre, the depression behind them longer than wide, the apex deep, the base much shallower and narrowed; the anterior ocellus roundish, surrounded by a rounded furrow. Third antennal joint as long as the second and fourth united; front and face densely covered with silvery pubescence. Pronotum with a steep oblique slope from the top to the bottom, the top rounded, clearly separated, widened laterally. Base of mesonotum closely, the sides and apex sparsely punctured, the scutellums still more sparsely punctured. Metanotum depressed in the middle, strongly striated, transversely on base, obliquely on sides of apex, the centre being smooth; the rest closely, strongly, rugosely punctured, with an irregularly reticulated area, widest on outer side, on the inner side at the base. Pro- and mesopleuræ shining, sparsely punctured; the meta-pleuræ closely irregularly reticulated. The last ventral segment is flat at the base, gradually narrowed to a fine point, then prolonged into a keel; the penultimate flat. The front over the antennæ is roundly raised. Middle of first abdominal segment keeled laterally. The striation on the metanotum is irregular, being more transverse in one example than in the other; it is strong in both.

Allied to *P. flavipes*.